RL-P270AJB Programmable Heavy Duty Shaft Encoder

DESCRIPTION

The RL-P encoder converts shaft rotation into square wave output pulses to provide an accurate and reliable means of digitizing position, rate, or length of travel. The number of pulses per each revolution of the shaft is determined by setting configuration switches. A direction output indicates the shaft rotation direction, clockwise (CW) or counter-clockwise (CCW), as viewed from the shaft end. The RL-P is intended to be shaft coupled using a flexible shaft coupling or other means to resolve shaft to shaft misalignment, or using a timing belt and sprocket.

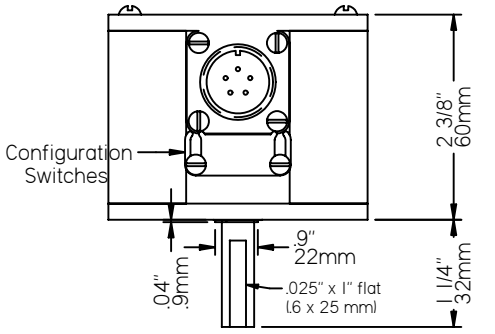
FEATURES

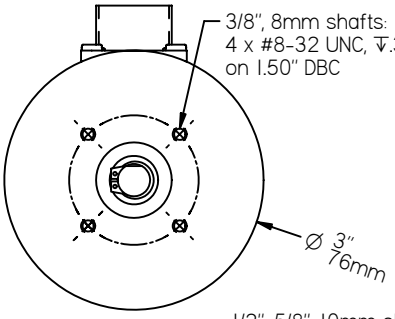
CE*

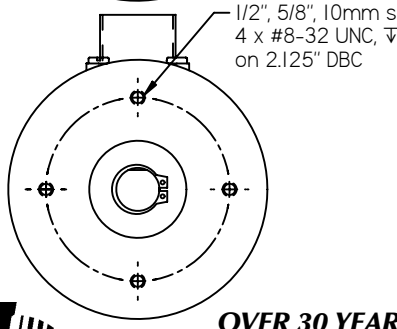
- **Programmable Pulses/Revolution and Direction Output**
- **ESD / Short Circuit / Reverse Voltage Protected**
- **Exclusive "Anti-Jitter" Circuit for Conveyor Applications**

* CE marking requires Photocraft cable, and surge protection option if cable exceeds 100' (30m) or leaves the building.

DIMENSIONS







OVER 30 YEARS OF MATERIAL HANDLING AND INDUSTRIAL EXPERIENCE

PHOTOCRAFT INC

602 E. North Street **630-365-7148**
Elburn, IL 60119, USA Fax: 630-365-7149
www.photocraftencoders.com

SPECIFICATIONS

Mechanical

Weight: 16.8 oz (475 gm) without cable

Shaft Loading:

Shaft Diameter	Radial Lbs (kg)	Axial Lbs (kg)	Factor (BL)
3/8" / 8mm	40 (18.1)	30 (13.6)	32
1/2" / 10mm	45 (20.4)	35 (15.9)	37
5/8"	50 (22.7)	40 (18.1)	41

Bearing Life: BL x 1,000,000/rpm = hours

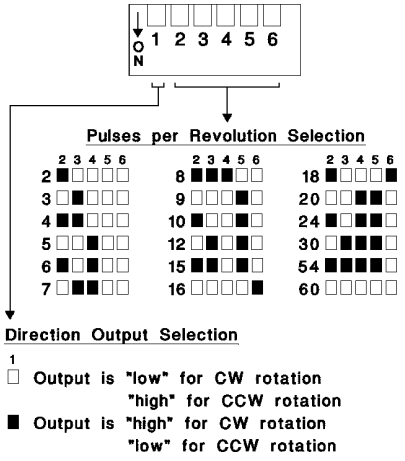
Materials:

- Case: ¼" Aluminum, anodized
- Shaft: 303 Stainless steel
- Switch cover: ABS plastic

Electrical Connections

Pin No.	Function	Wire Color
A	+vdc	Red
B	Common	Black
C	Pulse Output	White
D	Direction Output	Green
E	no connection	—

Configuration Switches



Electrical

Supply Voltages (Vin): (specify when ordering)

- — 5 ± 5% vdc
- — 8 to 30 vdc

Supply Current: 50 ma max (no load)

Output Current (Io): 50ma max source/sink

Output Circuit: (specify when ordering)

- — Current sinking NPN open collector (30 vdc max)
- — Push/Pull output

Output Protection:

- — Short Circuit
- — ESD to 8KV direct and 25KV air

Operating Temperature: 0° to 70° C

Maximum Operating Speed: 2,500 rpm

Outputs

Pulses per Revolution: Selectable by setting switches 2 to 6 (see configuration switches)

Output Waveform: 50/50 squarewave

- — **Pulse On-Off Ratio:** 50%±10%
- — **Pulse Interval Jitter:** ±10%
- — **Pulse rise time:** 2 µsec (max)
- — **Pulse fall time:** 5 µsec (max)
- — **Voltage (high):** Vin-2.5 vdc (min)
- — **Voltage (low):** 1.5 vdc (max)

(600 rpm, Vin=24vdc, 10ma<Io<50ma, 25°C)

Anti-jitter: Increases the pulse hysteresis to ½ of a pulse width, eliminating the effects of mechanical vibration and the possible dither that results in false output pulses. For example a 10 pulse per revolution output would have 18° hysteresis (i.e. 360° ÷ 10 × ½).

Direction output: Indicates the direction of rotation by setting switch 1 (see configuration switches), and is updated at each 1/540th of a revolution. This output is "low" when power is initially applied.

MODEL NUMBER

RL		—	P270AJB	/				
Model Number	**Shaft Diameter:** blank for 3/8", **.5**=1/2", **.625**=5/8", **M8**=8mm, **M10**=10mm, **D**=3/8" double ended		**Program Name** Call or see our website for information about other available programs for this encoder model.		**Supply Voltage:** **5**=5vdc, **8-30**=8-30vdc	**Output Circuit:** leave blank for push/pull, **C**=NPN open collector	**Modification Number:** optional modification or special feature ID. Call or see our website.	**Accessories:** leave blank for no accessories. Call or see our website for more information.

Example: **RL-P270AJB/8-30** - 3/8" shaft, P270AJB program, 8-30vdc, push/pull output